BRUHATH BANGALORE MAHANAGARA PALIKE
BYATARAYANAPURA DIVISION

Name of the work: Improvements to roads and drains of Kallappa Layout(Left Hand side and Right Hand Side of Main Road) in Ward No.7,Byatarayanapura

Second and Part Bill
Test Report

TEJUS
CONSULTANTS

Test Report on Cement

Project	Improvements to roads and drains of Kallappa Layout(Left Hand side and Right Hand Side of Main Road) in Ward No.7,Byatarayanapura
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	Benaka Developers & Project Pvt.Ltd.
Sample ID	Cement
Date of Sample Tested	12.04.2019
Sample Supplied By	Agency

Sl.No.	Descriptions	Test Method as per IS	Test Result	Requirements as per IS: 12269-1987
1	a) Initial Setting Time	IS-4031 (Part-5)	39 Minutes	Not Less than 30 Minutes
	b) Final Setting Time	IS-4031 (Part-5)	356 Minutes	Not More than 600 Minutes
2	Soundness	IS-4031 (Part-3) By the Le-Chatelier method	4mm	Not More than 10 mm
3	Standard Consistency	IS-4031 (Part-4)	27.50%	25 % to 35

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TEJUS CONSULTANTS

Authorised Signatory

AE (W7)

Assistant Executive Engineer
Kodigehalli Sub Division
Bruhat Bangalore Mahanagara Palike
Bangalore - 56[illegible]92

TEJUS
CONSULTANTS

TEST REPORT

Clients	BRUHAT BENGALORE MAHANAGARA PALIKE
Project	Improvements to roads and drains of Kallappa Layout(Left Hand side and Right Hand Side of Main Road) in Ward No.7,Byatarayanapura
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	Benaka Developers & Project Pvt.Ltd.

SPECIFIC GRAVITY AND WATER ABSORPTION

FINE AGGREGATE (IS-2386-PART-3)

Type of Material	Fine aggregate (River Sand/ M sand)	**Proposed Use**	PCC
Location/Source	At Site/Plant	**Date of Sampling**	12.04.2019
Period of Soaking	24 hours	**Date of Testing**	12.04.2019

Sl. No.	Test Property	TRIAL - 1	TRIAL - 2	TRIAL - 3	
A	Weight of sturated surface dry sample gm.	664	632	672	
B	Weight of oven - dry sample gm.	651	628	661	
C	Weight of Pycnometer Filled with water gm	1275	1275	1275	
D	Weight of Pycnometer + sample + water gm	1686	1686	1698	
E	Bulk specific gravity $\frac{B}{(C+A-D)}$	2.573	2.842	2.655	**2.690**
G	Absorption (%) $\frac{(A-B)*100}{B}$	1.997	0.637	1.664	**1.433**

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Bangalore - 560 092

AE(W7)

TEJUS
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TEST REPORT

Clients	Bruhat Bangalore Mahanagara Palike
Project	Improvements to roads and drains of Kallappa Layout(Left Hand side and Right Hand Side of Main Road) in Ward No.7,Byatarayanapura
Consultants	Tejus Consultants, Bangalore
Contractor	Benaka Developers & Project Pvt.Ltd.

SIEVE ANALYSIS

Total Weight:	**3000** gms		
Type of Material	**Fine aggregate (River Sand/ M sand)**	**Proposed Use**	concrete
Sample Location	At Site/Plant	**Date of Sampling**	12.04.2019
		Date of Testing	12.04.2019

IS Sieve Size	Weight Retained	Cum. Weight Retained	Cum. % Retained	Cum. % Passing	Spec. Limit (%) Passing (Zone-II)
10.00 mm	0	0	0	100.00	**100**
4.75 mm	211	211	7.03	92.97	**90 - 100**
2.36 mm	312	523	17.43	82.57	**75 - 100**
1.18 mm	411	934	31.13	68.87	**55 - 90**
0.600 mm	486	1420	47.33	52.67	**35 -59**
0.300 mm	750	2170	72.33	27.67	**8-30**
0.150 mm	620	2790	93.00	7.00	**0 - 10**
Pan	210	3000			-

Remarks : Satisfactory / Not Satisfactory

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Bruhat Bangalore Mahanagara Palike
Bangalore - 560 092

TEJUS
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TEST REPORT

Clients	Bruhath Bangalore Mahanagara Palike
Project	Improvements to roads and drains of Kallappa Layout(Left Hand side and Right Hand Side of Main Road) in Ward No.7,Byatarayanapura
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	Benaka Developers & Project Pvt.Ltd.
Total Weight in gm:	3000

SIEVE ANALYSIS

Type of Material	40 mm down size	**Proposed Use**	PCC
Sample Location	At Site/Plant	**Date of Sampling**	12.04.2019
		Date of Testing	12.04.2019

IS Sieve Size	Weight Retained in gm	Cum. Weight Retained in gm	Cumulative Weight Retained in %	Cumulative Weight Passing in %	Specific Limits as per IS 383-1970 (RA-2007) % of Passing For Graded Aggregate of Nominal Size
80.00mm	0	0	0.00	100.00	100
63.00mm	0	0	0.00	100.00	-
40.00mm	86	86	2.87	97.13	95-100
20.00mm	1400	1486	49.53	50.47	30-70
10.00mm	975	2461	82.03	17.97	10-35
4.75mm	452	2913	97.10	2.90	0-5
Pan	87	3000	100.00	0.00	

Remarks : ✓ Satisfactory / Not Satisfactory

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Bruhat Bangalore Mahanagara Palike
Bangalore - 560 092

TEJUS
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PRECAST SLAB (CORE) TEST REPORT		
Client	:	Bruhat Bangalore Mahanagara Palike
Contractor	:	Benaka Developers & Project Pvt.Ltd.
Name of Work	:	Improvements to roads and drains of Kallappa Layout(Left Hand side and Right Hand Side of Main Road) in Ward No.7,Byatarayanapura
No.of Sample Tested	:	3
Date of Testing	:	18.04.2019
Techinical Reference	:	IS:516-1959 (Reaffirmed 1999), SP-24:1983.
Grade of Concrete	:	M_{20}. 250mm Thick

Sl. No.	Dia of Core D (mm)	Height of Core H (mm)	Core Wt (Kg)	Density of Core (kg / m^3)	H / D	Correction factor (Based on H/D)	Failure Load (kN)	Core Strength (N/mm^2)	Correction Factor for the Dia. (Strength of the	Corrected Cylinder Compressive Strength (N/mm^2)	Equivalent Cube Compressive Strength (N/mm^2)
1	100.00	180.00	3.385	2394.40	1.80	0.961	159.00	20.24	21.86	21.01	26.26
2	100.00	180.00	3.425	2422.69	1.80	0.968	159.23	20.27	21.90	21.20	26.49
3	100.00	180.00	3.422	2420.57	1.80	0.964	159.65	20.33	21.95	21.16	26.45

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Consultant's Representative

Assistant Executive Engineer
Kodigehalli Sub Division
Bruhat Bangalore Mahanagara Palike
Bangalore - 560 092

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TEST REPORT

Clients	Bruhat Bangalore Mahanagara Palike	
Project	Improvements to roads and drains of Kallappa Layout(Left Hand side and Right Hand Side of Main Road) in Ward No.7,Byatarayanapura	
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore	
Contractor	Benaka Developers & Project Pvt.Ltd.	
Total Weight:	10000	gms

SIEVE ANALYSIS

Type of Material	**12.5 mm down size**		**Proposed Use**	Concrete	
Sample Location	Plant/site		**Date of Sampling**	22.04.2019	
			Date of Testing	22.04.2019	
IS Sieve Size (in mm)	**Weight Retained**	**Cum. Weight Retained**	**Cum. % Retained**	**Cum. % Passing**	**Spec. Limit (%) Passing**
20.0	0	0	0	100	100
12.5	584	584	5.84	94.16	90-100
10.0	2289	2873	28.73	71.27	40-85
4.75	6521	9394	93.94	6.06	0-10
Pan	606	10000			

Remarks : ✓ Satisfactory / Not Satisfactory

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Bruhat Bangalore Mahanagara Palike
Bangalore - 560 092

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TEST REPORT					
Clients	Bruhat Bangalore Mahanagara Palike				
Project	Improvements to roads and drains of Kallappa Layout(Left Hand side and Right Hand Side of Main Road) in Ward No.7,Byatarayanapura				
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore				
Contractor	Benaka Developers & Project Pvt.Ltd.				
Total Weight:	10000	gms			
SIEVE ANALYSIS					
Type of Material	20 mm down size		**Proposed Use**	Concrete	
Sample Location	At Plant		**Date of Sampling**	22.04.2019	
			Date of Testing	22.04.2019	
IS Sieve Size	**Weight Retained**	**Cum. Weight Retained**	**Cum. % Retained**	**Cum. % Passing**	**Spec. Limit (%) Passing**
40.00 mm	0	0	0	100	**100**
20.00 mm	271	271	2.71	97.29	**95 - 100**
10.00 mm	4906	5177	51.77	48.23	**25 - 55**
4.75 mm	4136	9313	93.13	6.87	**0 - 10**
Pan	687	10000			
Remarks :		✓ Satisfactory / Not Satisfactory			

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TEST REPORT

Clients	BRUHAT BENGALORE MAHANAGARA PALIKE
Project	Improvements to roads and drains of Kallappa Layout(Left Hand side and Right Hand Side of Main Road) in Ward No.7,Byatarayanapura
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	Benaka Developers & Project Pvt.Ltd.

SPECIFIC GRAVITY AND WATER ABSORPTION FINE AGGREGATE
(IS-2386-PART-3)

Type of Material	**Sand/M sand**	**Proposed Use**	Drain
Location/Source	**At Plant/site**	**Date of Sampling**	22.04.2019
Period of Soaking	**24 hours**	**Date of Testing**	22.04.2019

Sl. No.	Test Property		TRIAL - 1	TRIAL - 2	TRIAL - 3	Average
A	Weight of sturated surface dry sample gm.		689	654	667	
B	Weight of oven - dry sample gm.		671	644	656	
C	Weight of Pycnometer Filled with water gm		1275	1275	1275	
D	Weight of Pycnometer + sample + water gm		1705	1685	1695	
E	Bulk specific gravity	B	2.591	2.639	2.656	**2.629**
		(C + A - D)				
G	Absorption (%)	(A - B) *100	2.683	1.553	1.677	**1.971**
		B				

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TEST REPORT					
Clients	Bruhat Bangalore Mahanagara Palike				
Project	Improvements to roads and drains of Kallappa Layout(Left Hand side and Right Hand Side of Main Road) in Ward No.7,Byatarayanapura				
Consultants	Tejus Consultants, Bangalore				
Contractor	Benaka Developers & Project Pvt.Ltd.				
SIEVE ANALYSIS					
Total Weight:	**3000** gms				
Type of Material	**Fine aggregate (River Sand/M sand)**		**Proposed Use**	Drain	
Sample Location	At Plant/site		**Date of Sampling**	22.04.2019	
			Date of Testing	22.04.2019	
IS Sieve Size	**Weight Retained**	**Cum. Weight Retained**	**Cum. % Retained**	**Cum. % Passing**	**Spec. Limit (%) Passing (Zone-II)**
10.00 mm	0	0	0	100.00	**100**
4.75 mm	242	242	8.07	91.93	**90 - 100**
2.36 mm	286	528	17.60	82.40	**75 - 100**
1.18 mm	513	1041	34.70	65.30	**55 - 90**
0.600 mm	564	1605	53.50	46.50	**35 -59**
0.300 mm	623	2228	74.27	25.73	**8-30**
0.150 mm	561	2789	92.97	7.03	**0 - 10**
Pan	211	3000			-
Remarks :			Satisfactory / Not Satisfactory		

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Assistant Executive Engineer
Kodigehalli Sub D
Bruhat Bangalore

TEJUS CONSULTANTS

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Test Report on Cement	
Project	Improvements to roads and drains of Kallappa Layout(Left Hand side and Right Hand Side of Main Road) in Ward No.7,Byatarayanapura
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	Benaka Developers & Project Pvt.Ltd.
Sample ID	Cement
Date of Sample Tested	22.04.2019
Sample Supplied By	Agency

Sl.No.	Descriptions	Test Method as per IS	Test Result	Requirements as per IS: 12269-1987
1	a) Initial Setting Time	IS-4031 (Part-5)	39 Minutes	Not Less than 30 Minutes
	b) Final Setting Time	IS-4031 (Part-5)	376 Minutes	Not More than 600 Minutes
2	Soundness	IS-4031 (Part-3) By the Le-Chatelier method	4 mm	Not More than 10 mm
3	Standard Consistency	IS-4031 (Part-4)	25.00%	

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Assistant Executive Engineer
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Bruhat Bangalore Mahanagara Palike
Bangalore - 560 09

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CONSULTANTS

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

Project	Improvements to roads and drains of Kallappa Layout(Left Hand side and Right Hand Side of Main Road) in Ward No.7,Byatarayanapura
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	Benaka Developers & Project Pvt.Ltd.
Grade of concrete:	M15
Size of cube:	150x150x150 mm
Reference IS code:	IS:516-1959

Sl.No.	Date of Casting	Date of testing	Age of Test	Weight of Cube	Area of Cube	Failure load	Compressive strength	Avg. Compressive strength
				Kg	mm^2	KN	N/mm^2	N/mm^2
1	22.04.2019	29.04.2019	7 days	8.123	22500	215	9.56	9.47
2	22.04.2019	29.04.2019	7 days	8.133	22500	211	9.38	
3	22.04.2019	29.04.2019	7 days	8.132	22500	213	9.47	

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TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

Project	Improvements to roads and drains of Kallappa Layout(Left Hand side and Right Hand Side of Main Road) in Ward No.7,Byatarayanapura
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	Benaka Developers & Project Pvt.Ltd.
Grade of concrete:	M15
Size of cube:	150x150x150 mm
Reference IS code:	IS:516-1959

Sl.No.	Date of Casting	Date of testing	Age of Test	Weight of Cube	Area of Cube	Failure load	Compressive strength	Avg. Compressive strength
				Kg	mm^2	KN	N/mm^2	N/mm^2
1	22.04.2019	20.05.2019	28days	8.131	22500	345	15.33	15.27
2	22.04.2019	20.05.2019	28days	8.120	22500	340	15.11	
3	22.04.2019	20.05.2019	28days	8.140	22500	346	15.38	

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